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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,910	10/30/2003	Mohammad Shahanshah Akhter	PAT 811-2 US	5673
26123	7590	07/26/2004	EXAMINER	
BORDEN LADNER GERVAIS LLP WORLD EXCHANGE PLAZA 100 QUEEN STREET SUITE 1100 OTTAWA, ON K1P 1J9 CANADA			JEANGLAUDE, JEAN BRUNER	
			ART UNIT	PAPER NUMBER
			2819	

DATE MAILED: 07/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/695,910

Applicant(s)

AKHTER ET AL.

OK

Examiner

Jean B Jeanglaude

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-11 is/are allowed.
- 6) ☒ Claim(s) 1-3,6,8,12,13,16-18 is/are rejected.
- 7) ☒ Claim(s) 4,5,7,14 and 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 – 3, 6, 8, 12, 13, 16 – 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gray (US Application Number 09/849,742).

3. Regarding claims 1, 2, 12, 16, 17, 18, Gray discloses a data encoder and method (fig. 2) that encode a codeword having a plurality of symbols for transmission through a data channel comprising a turbo encoder (fig. 2) (paragraph 13, line 1) having an interleaver (202, fig. 2) [a modified dithered, prime interleaver] for receiving the codeword and providing an interleaved codeword (fig. 2; paragraph 13, lines 3); first and second recursive systematic convolutional (RSC) encoders (200, fig. 2), the first RSC [200(1)] as noted in fig. 2 received the codeword and providing first parity bits in accordance with the codeword, the second RSC encoder [200(2)] receives the interleaved codeword from the interleaver and providing second parity bits in accordance with the interleaved codeword (fig. 2); a puncturer [204(1,2,3)] receives the codeword, the first parity bits and the second parity bits and for puncturing at least the first and second parity bits in accordance with a pattern of a desired code rate (fig. 2). Gray's system further comprises a log-map decoder (404, fig. 4). Gray does not explicitly disclose a data encoder that comprises a mapper that receives the punctured parity bits and for providing signal sets in accordance with the desired code rate.

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However, it is noted in Gray's system that a log-map decoder (404, fig. 4) is used to received depuncture signals from the depuncture circuit (402) which are being transmitted via a channel. One ordinary skill in the art would understand that in the codeword being punctured by a puncture circuit a mapping circuit would map the signals before being transmitted via a channel communication for process. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that Gray's system is at least fully equivalent to the claim invention and would perform the same function as the claim invention.

4. Regarding claims 3, 6, 13, Gray does not explicitly disclose a data encoder wherein the RSC encoders are rate $2/3$, 8 state RSC encoders and the codeword is a 25600-bit frame. However, one skill in the art would recognize that the rate, the state, the number of bit frame of the codeword is an alternative way of selecting the rate, the state and the number of bit frame. Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made that Gray's system would have worked for a rate, state number and the codeword length specified in a system and such a specification is an alternative way that will perform the same function as the claimed invention.

5. Regarding claim 8, Gray discloses a data encoder (fig. 2) wherein the turbo encoder (fig. 2) includes an interleaver [202 (2)] coupled to a RSC encoder [200(3)], the further interleaver received the codeword and providing a further interleaved codeword to the RSC encoder [200(3)], the RSC encoder [200(3)] providing parity bits to the puncturer [204(3)].

Allowable Subject Matter

6. Claims 9 – 11 are allowable subject matter.
7. Claims 4, 5, 7, 14, 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
8. Reasons for allowing the aforementioned claims will be provided in the next office action.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
10. Claydon et al. (US Patent Number 5,793,818) discloses a signal processing system.
11. Van Stralen et al. (US Patent Number 6,516,437) discloses a turbo decoder control for use with a programmable interleaver variable block length and multiple code rates.
12. Crozier (US Patent Number 6,728,927) discloses a method and system for high-spread high-distance interleaving for turbo-codes.
13. Stralen et al. (US Application Number 10/356,872) discloses a turbo decoder control for use with a programmable interleaver variable block length and multiple code rates.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean B Jeanglaude whose telephone number is 571-

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272-1804. The examiner can normally be reached on Monday - Friday 7:30 A. M. - 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Tokar can be reached on 571-272-1812. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jean Bruner Jeanglaude
Primary Examiner
July 19, 2004